Patient 296

By Cdr. Skip Trahan

The jokes began as soon as the flight schedule was published the day earlier and continued through the brief the following day. Only one member of the five-person crew was under 30. And the only reason the 23 year old 2nd crewman had been scheduled with the "Geritol gang" was to be on hand in case one of the senior members broke a hip getting into the aircraft. So goes the normal, friendly banter of forward-deployed aviation operations.

The nine-line call for launch came at 1825, a little more than one hour past sunset, on a starlight only night. The mission was to pick up a wounded soldier at Navistar (Iraq-Kuwait border-crossing station) and transport him to the level III (surgical-care unit) at Arif Jan. The patient was characterized as "urgent surgical."

The route was preplanned. As the crew assembled in the aircraft, weather was the biggest concern. Strong seasonal winds from the south had pushed moisture off the gulf and combined it with dust to bring the forecast weather to 800-foot ceiling and two-mile visibility in the area of pickup. We also were told, "Rapidly degrading conditions of less than 400 meters visibility to the south." There are no instrument approaches at Navistar or Arif Jan, or instrument routes between the facilities.

With the weather providing a formidable obstacle, the "Geritol gang" had two positive factors in its corner. The first was a forward-looking-infrared-radar (FLIR) equipped aircraft, and the second was the experience provided by 9,980 combined flight hours across a crew with three WTIs (weapons-training instructors).

Launching to the north from the NAAD base of operations at Udairi Army Air Field, the crew immediately encountered the 800-foot ceiling and 400-meter visibility predicted for the southern portion of the flight. From 500 feet (required altitude to avoid most hazards in Kuwait), the ANVIS 9 NVGs (night-vision goggles) allowed the crew to see only the ground below the aircraft, but barely. The IR searchlight was tried

The 2515th Navy Air-Ambulance Detachment (NAAD) is a provisional, composite squadron which provides land-based medevacs. The squadron of three MH-60S and three HH-60H aircraft includes 126 personnel and aircraft from HSC-21 in San Diego, Calif., and HS-15

in Jacksonville, Fla., as well as helicopter SAR corpsmen from units around the world. Their task is to provide two-ship, alert-15 aircraft, 24/7 for response throughout all of Kuwait, the North Arabian Gulf, and Southern Iraq. A total of 296 personnel have been medevac'd by the NAAD since assuming the watch in November 2005.

but provided a negative effect, so its continued use was abandoned. Only FLIR provided the crew with a horizontal view of about 1.5 miles. Because of the moisture in the air, the image was mushy at best; however, it provided sufficient visual cues for operations—although no horizon. The aircraft flew at 90 knots to improve pilot-reaction time to hazards. With one pilot flying and the other watching ahead with the FLIR and providing navigation calls, the high-tension wires, poles and antennas that crisscross the route to the landing site all were avoided.

The landing at Navistar revealed a young IED-attack victim from Southern Iraq, who had been transported from point of injury by ambulance for airlift. He had not been stabilized by any higher care provider than a field medic.

Launching back into the weather, the crew discussed alternatives if either weather or patient conditions

degraded. The flight from Navistar to Arif Jan was estimated at one hour, based on navigationally safe airspeed.

Ten minutes into the flight, the patient's blood pressure dropped to 83 over 30, because of excessive bleeding from a lower-extremity wound; the patient was failing. The corpsman recommended an intermediate stop at Udairi's level II medical clinic to further stabilize the patient. The medical-regulating officer (MRO) had recommended a direct flight because Udairi's clinic did not have a blood supply. Weighing the options, the crew agreed with the corpsman's plan. It would give more of a lease on life to the patient, and it would give the aircrew a chance to update weather and get additional fuel. The aviation concern was 45 minutes of flying south into predicted worse conditions.

While getting more fuel, the weather update from local observations indicated the weather to the south was improving. With plenty of fuel and a now stabilized patient, the crew launched into the weather and headed for the surgical unit. Eight miles to the south of Udairi, the copilot got a momentary case of the leans from an illusion created by a ground-vehicle's headlights on an adjacent highway that angled away from the aircraft, which was in a turn. Once the physiological episode was identified, the situation quickly was rectified by leveling the wings and both pilots immediately going to a cockpit instrument scan.

Fifteen miles to the south, the weather was much better, and the crew increased speed to get the patient into surgery sooner than expected. The rest of the flight was uneventful.

Upon return to Udairi, the rest of the night was spent removing the litter-management system, floor armor, and floor boarding to clean up the biohazards created by the soldier's injuries. The NAAD learned that, in postop, the young soldier was "not out of the woods yet" but in stable and improving condition. A few days later, the patient's condition had improved greatly, and he was well enough for transportation out of theater.

What are the take-aways from patient 296?

Medevacs are a composite mission, based on patient care and aviation considerations. The conditions of either will impact decision-making for the crew. A decision to press south, without the intermediate stop to stabilize, could have proved disastrous for the patient if his condition had worsened and/or the aircraft had been forced to abort because of weather and return to other than adequate care. This scenario is a challenge for mission commanders because of the rotary-aviation community's lack of medical knowledge. The functional leadership role of the corpsman was critical in making the right choice. The importance of the corpsman's role in the possible scenarios and options must be discussed in the brief. This evolution is crew-resource management (CRM) in action.

The mix of technology and experience tipped the scales in favor of our mission success. A less experienced crew with the same advantages provided by FLIR, or a seasoned crew without a FLIR, may not have yielded the same results. Leaders are challenged to make decisions on mission "go or no go" with many variables. It becomes a further challenge when leadership takes on a mission and succeeds, but leadership may not approve such a mission for a less equipped or experienced crew. We have no question this soldier would have died without an air ambulance, and every crew strapping on an aircraft, regardless of their experience, realizes they may be the ones to tip the balance of the scale in one direction or the other. Every crew says, "Send me."

FLIR is critical for night overland missions, and its integration for navigation capability is a must. Use of FLIR for navigation technology (flight-path-vector mode) has existed for nearly two decades in the Army and Air Force, yet Navy helicopters repeatedly have "missed the boat" by not capitalizing on the full potential of this capability. The synergy of hardware and integration is the path the Navy must take. The overland missions will continue, and the Navy will be tasked to participate; this tool is a "must have."

Finally, ORM does not rule out performing high-risk missions—it is not a safety program. ORM challenges us as aviators to meet the risk with adequate personnel planning, equipment, training, experience, and sound decision-making to successfully accomplish the mission.

Cdr. Trahan is the commanding officer of HS-15 and the 2515th NAAD.

Dehydration Will Ruin a Mission

By Lt. Jasmine Gough

I just had arrived for the first time at Al Asad Air Base, Iraq, from USS *Enterprise* (CVN-65), in support of an Operation-Iraqi-Freedom (OIF) detachment. The transit was a 4.5-hour flight from the carrier to the desert. In the past, I would dehydrate myself for these long flights for two reasons. First, I'm a female in a mostly male squadron. Second, I haven't had to use the piddle pack and relieve myself yet. I didn't feel I needed to drink as much because the weather was not very hot, and I wasn't sweating.

Upon my arrival in Iraq, I got my bearings with a quick tour of the base. The second day was a turnover day, so there was no flying. When the schedule came out on the third day, I was scheduled for my first OIF flight, a 6.7-hour flight.

"OK, it'll be all right", I thought. I can learn to relieve myself in the jet. I'm in the backseat alone, which is as good a time as any to practice. I had all the required paraphernalia, and I even had gotten a brief from a senior female aviator before I left on deployment. I've also had multiple conversations with other female aviators on this subject—I felt ready. But, I underestimated the effects of a dry-heat location.

Being on the ship in the Gulf, I got used to the sweaty humidity and quickly forgot about dry heat. I drank plenty of water on the boat, because after a day launch in the middle of summer, I would return drenched and obviously needed fluids. However, Iraq is so hot and dry, you don't realize you're still sweating.

Looking back, I had not realized how dehydrated I was before my first flight. The first night I arrived, I had a headache. I just figured it was a random headache that would go away by morning. The second day, I had a little more of a headache, but I guessed that exercising would help loosen some tension or stress. The third day, the day of my flight, I started with a short run on the treadmill and tried to drink more water. By midafternoon, my headache was much worse. I thought lying down and taking a short nap would help, but it didn't.

By dinnertime, the pain was excruciating. I thought if I had something in my stomach, I'd feel better, and the headache would go away. Then nausea set in, which was horrible, because I had nothing in my system. My head hurt so bad; it was the worst I've felt in a long time. I found a JO to take me to medical. I was embarrassed because I would have to tell the doc what I already knew: I didn't drink enough water, and I was going to be removed from the flight schedule.

They took some vitals, asked me some questions, and started the IV. After taking on one liter of saline solution, I was good to go. The flight doc prescribed antinausea medication, which downed me for an additional day, because of the possible drowsy effects that follow. I was instructed to drink two 1.5-liter bottles of water and one 1.5-liter bottle of Gatorade a day. I don't even like Gatorade, but I didn't want to miss any more flights.

The next morning I felt great. I downed plenty of water, completed my first OIF flight, and used the relief tube twice in one flight, another 6.7-hour mission. I even drank 1.5 liters of Gatorade later that day, after I found a flavor I liked.

Looking back, I intentionally was dehydrating myself for that first flight, and I know a lot of female aviators who do the same. Also, I am not in the habit of regularly drinking enough water, let alone drinking enough while in the desert in the middle of summer. I now drink an average of four to five liters of water a day, and I don't worry about using a piddle pack in the jet anymore. If the boys can do it, so can the girls.

Lt. Gough flies with VAQ-137.

While sweating is an obvious means of water loss, it is not the only one. "Insensible losses" are those that you don't notice, and include water lost from dry skin or in exhaled breath. Insensible losses are especially important in dry environments. Because aviators often work in hot aircraft and breathe dry aviation oxygen, they can lose surprisingly large amounts of water from their skin and lungs without realizing it.

Don't depend on how much you're sweating to judge your hydration status. The best strategy is to drink plenty of fluids, and to make sure you're frequently making plenty of light yellow urine. When your urine is dark, the quantity is small, or you don't go very often, you're already dehydrated!—*Cdr. Kevin E. Brooks, MD MPH, aeromedical analyst, Naval Safety Center.*

For a related Approach *article on this topic, visit: http://www.safetycenter.navy.mil/media/approach/issues/mar03/ToPeeOrNot.htm --Ed.*